Quiz 10: 2/11/15

Question 1

Fix the following code so that x will be consistant no mater how context switches fall.

```c
#include <pthread.h>
#include <stdio.h>

int x = 0;

pthread_mutex_t mutex;

void *thread(void* param)
{
    int i;
    for(i=0;i<5;i++)
    {
        pthread_mutex_lock(&mutex); // lock the mutex
        x = x+i;                    // critical section
        pthread_mutex_unlock(&mutex);   // unlock the mutex
        sleep(1);               // sleep for 1 second
    }
    printf("x=%d\n", x);
    return NULL;
}

int main(int argc, char** argv)
{
    pthread_t thread1, thread2;

    pthread_mutex_init(&mutex, NULL); // initialize the mutex

    pthread_create(&thread1, NULL, thread, NULL);
    pthread_create(&thread2, NULL, thread, NULL);

    pthread_join(thread1, NULL);
    pthread_join(thread2, NULL);

    return 0;
}
```